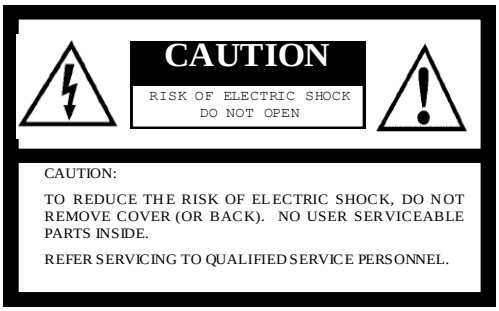
SENTECH

STC-A33A
Product Specification

Small Cubic Type – VGA CCD
Monochrome Analog Camera

Safety Precautions


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION:
TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

For U.S.A.

Warning:

This equipment generates and uses radio frequency energy and if not installed and used properly, I.e., in strict accordance with the instruction manual, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

For Canada

Warning:

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING:

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

Product Precautions

- Handle the camera with care. Do not abuse the camera. Avoid striking or shaking it. Improper handling or storage could damage the camera.
- Do not pull or damage the camera cable.
- During camera use, do not wrap he unit in any material. This will cause the internal temperature of the unit to increase.
- Do not expose the camera to moisture, or do not try to operate it in wet areas.
- Do not operate the camera beyond its temperature, humidity and power source ratings.
- While the camera is not being used, keep the lens or lens cap on the camera to prevent dust or contamination from getting in the CCD or filter area and scratching or damaging this area.
- Do not keep the camera under the following conditions:
    - In wet, moist, and high humidity areas
    - Under hot direct sunlight
    - In high temperature areas
    - Near an object that releases a strong magnetic or electric field
    - Areas with strong vibrations
- Use a soft cloth to clean the camera. Use pressured air spray to clean the surface of the glass. DO not scratch the surface of the glass.

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I. Specifications

A. Electronic Specifications / Mechanical Specifications / Environmental Conditions

Product			STC-A33A
Electronic Specifications	Imager		1/3" Interline VGA Monochrome Progressive CCD: ICX424AL
	Total Picture Elements		692 (H) x 504 (V)
	Effective Picture Elements		659 (H) x 494 (V)
	Active Picture Elements		VGA: 648 (H) x 494 (V)
	Chip Size		5.79 (H) x 4.89 (V)
	Cell Size		7.4 (H) x 7.4 (V) µm
	Scanning Systems		Progressive
	Scanning Method		Full Scanning, Partial Full Scanning, ½ Partial Scanning, ¼ Partial Scanning, Variable Partial Scanning, Binning, Binning Partial Scanning Binning ½ Partial Scanning, Binning ¼ Partial Scanning Binning Variable Partial Scanning
	Vertical Frequency		31.47 (30fps) / 62.94 (60fps) / 94.784 (90fps) Hz
	Horizontal Frequency		15.7343 (30fps) / 31.4685 (60fps) / 47.2028 (90fps) kHz
	Pixel Frequency		12.2727 (30fps) / 24.5454 (60fps) / 36.8181 (90fps) MHz
	S/N Ratio (Standard Deviation)		56 dB (GAIN 0 dB)
	Minimum Scene Illumination		1 Lux at F1.4
	Sync. System		Internal / External
	Video Output		1.0 Vp-p / 75Ω, DC Coupling (0V)
	Shutter Speed	DIP Switch	OFF; 1/200; 1/500; 1/1000; 1/2000; 1/4000; 1/8000; 1/20,000 second
		Communication	OFF; ½ to 1/100,000 sec. (Variable at every H and Clock)
	Gain		0 to 27 dB
	Gamma		1.0 / 0.45
	Power Supply	Input Voltage	DC 12V ± 10%
		Consumption	Less than 1.8 W
	Trigger Mode		Edge Preset Trigger (V-reset, Non-reset) Pulse Width Trigger (V-reset, Non-reset)
	Communication		RS232 via 12 Pin Connector
Mechanical Specifications	Dimensions		28(W) x 28(H) x 46.3(D)mm including lens mount and connector
	Optical Filter		No IR Cut Filter
	Optical Center Accuracy		Positional Accuracy in H and V directions: +/- 0.31mm
	Material	Case	Front, Base, and Rear: Aluminum Die Cast (ADC12) Cover: Steel Sheet Covered with Zinc
		Tripod	Polycarbonate ABS
	Lens Mount		C Mount
	Interface Connector		HR10A-10R-12PB (Hirose) or equivalent
	Tripod		Tripod can be attached to 4 plates (4 screws on the bottom plate, 3 screws on the other 3 plates)
	Weight		Approximately 52g (Camera: 43g, Tripod: 9g)
Environmental Conditions	Temperature and Humidity	Operational	Temperature: -5 to 50°C; Relative Humidity: 0 to 85% (No Condensation)
		Storage	Temperature: -30 to 65°C; Relative Humidity: 0 to 90% (No Condensation)
	Vibration		20Hz to 200Hz to 20Hz (5 min./cycle), Acceleration 10G, 3 Directions 30 Minutes Each
	Shock		Acceleration 70G, Half Amplitude 6ms, 3 Directions 3 Times Each
	Standard Compliancy		EMS: EN61000-6-2, EMI: EN55011 (Class B)
	RoHS		RoHS Compliant

B. Rear Panel Specifications

1. Connector Pin Assignment

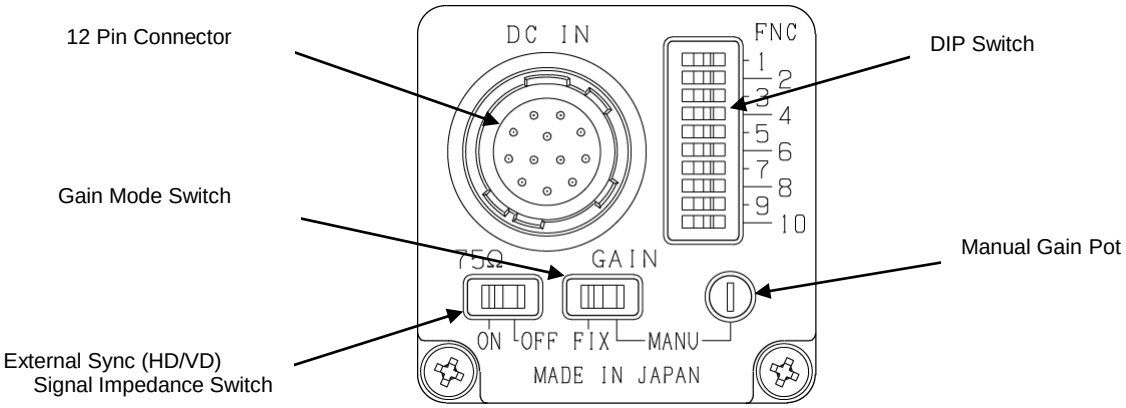


Figure 1

12 Pin Connector Assignment

The connector type: HR10A-10R-12PB (Hirose) or equivalent

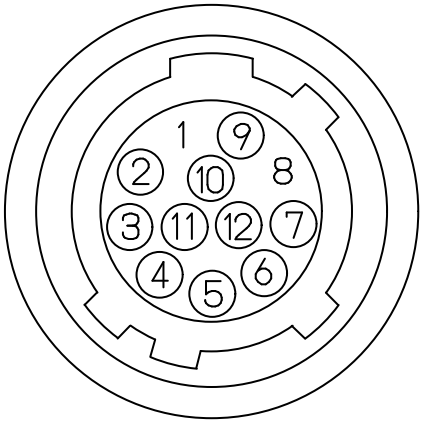


Figure 2

Pin Assignment

No.	Signal types	
	Internal sync	External sysnc
1	GND	GND
2	+12V DC	+12V DC
3	VIDEO GND	VIDEO GND
4	VIDEO OUT	VIDEO OUT
5	HD GND	HD GND
6	HD OUT	HD IN
7	VD OUT	VD IN
8	GND	GND
9	TXD	TXD
10	WEN OUT	WEN OUT
11	TRG IN	TRG IN
12	RXD (Note)	RXD (Note)

*Note: Pin No.12 can be connected to GND

The camera settings can change by RS232C communication with No. 9 and 12.
Please refer the detail for the user's guide.

2. DIP Switch Settings (Refer to **Dip Switch** in **Figure 1**)

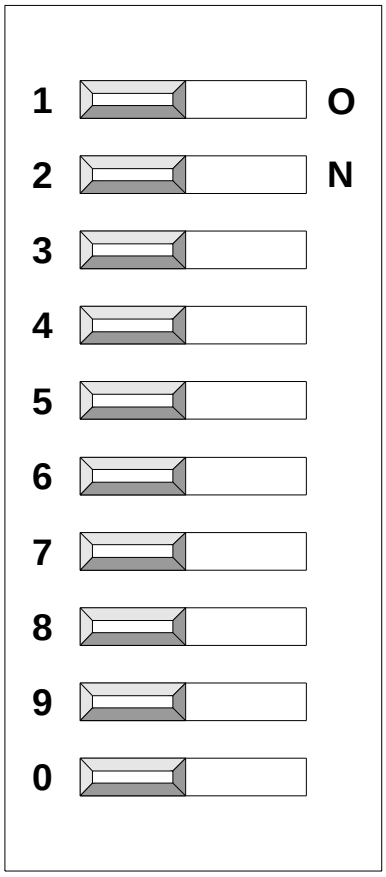


Figure 3

DIP Switch No. 1 to 3: Shutter Speed

Shutter Speed	No. 1	No. 2	No. 3
OFF/Plus width	OFF	OFF	OFF
1/200 sec.	**ON**	OFF	OFF
1/500 sec.	OFF	**ON**	OFF
1/1,000 sec.	**ON**	**ON**	OFF
1/2,000 sec.	OFF	OFF	**ON**
1/4,000 sec.	**ON**	OFF	**ON**
1/8,000 sec.	OFF	**ON**	**ON**
1/20,000 sec.	**ON**	**ON**	**ON**

DIP Switch No. 4 to 5: Reset Mode

Reset mode	No. 4	No. 5
Non-reset	OFF	OFF
V-reset	**ON**	OFF

DIP Switch No. 6: Trigger Polarity

Trigger polarity	No. 6
Positive	OFF
Negative	**ON**

DIP Switch No.7 to 8: Scanning Method

Scanning method	No. 7	No. 8
Full	OFF	OFF
Full	**ON**	OFF
1/2 partial	OFF	**ON**
1/4 partial	**ON**	**ON**

DIP Switch No.9: Sync. System

Sync. System	No. 9
External	OFF
Internal	**ON**

DIP Switch No.10: Binning

Binning	No. 10
OFF	OFF
ON	**ON**

3. External Sync. (HD/VD) signal impedance setting (See **External Sync.** in **Figure 1**)

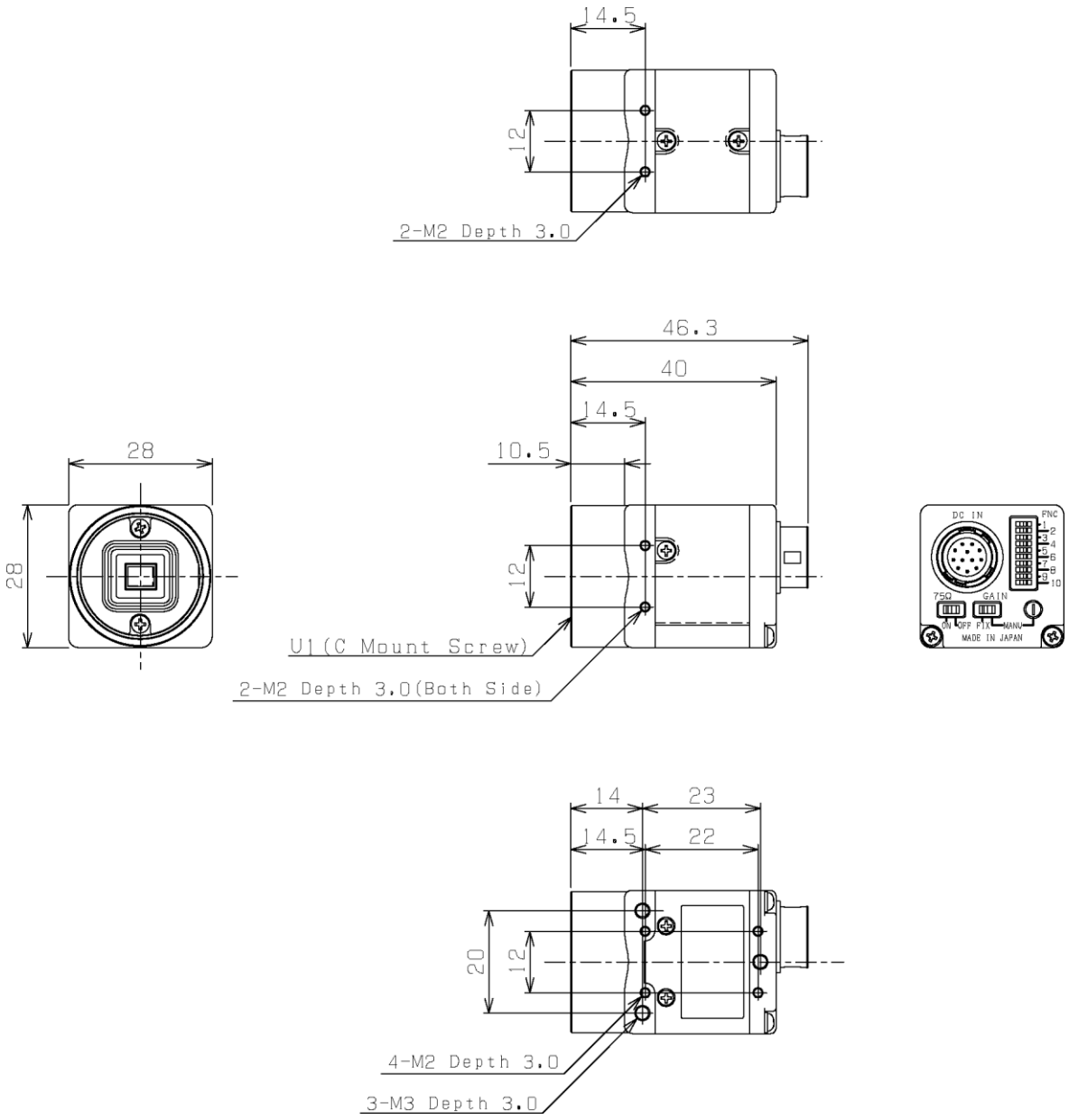
ON:	75Ohm termination
OFF:	High impedance

4. Gain Mode Setting (See **Gain Mode Switch** in **Fig. 1**)

FIX:	Fixed gain
MAN:	Manual gain The gain can be adjustable by the manual gain pot (See **Manual Gain Pot** in **Fig. 1**).

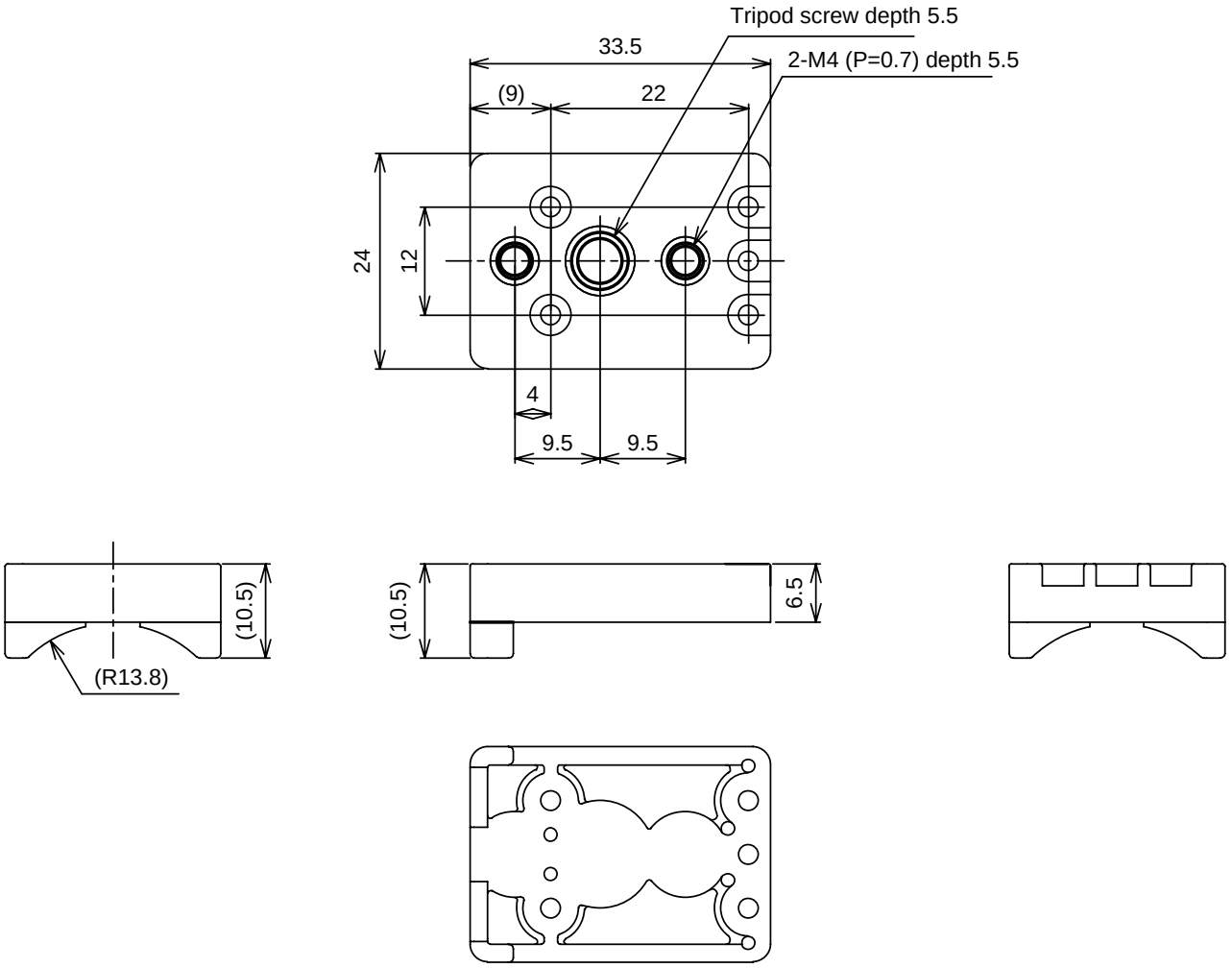
II. Dimensions

A. Camera Dimensions



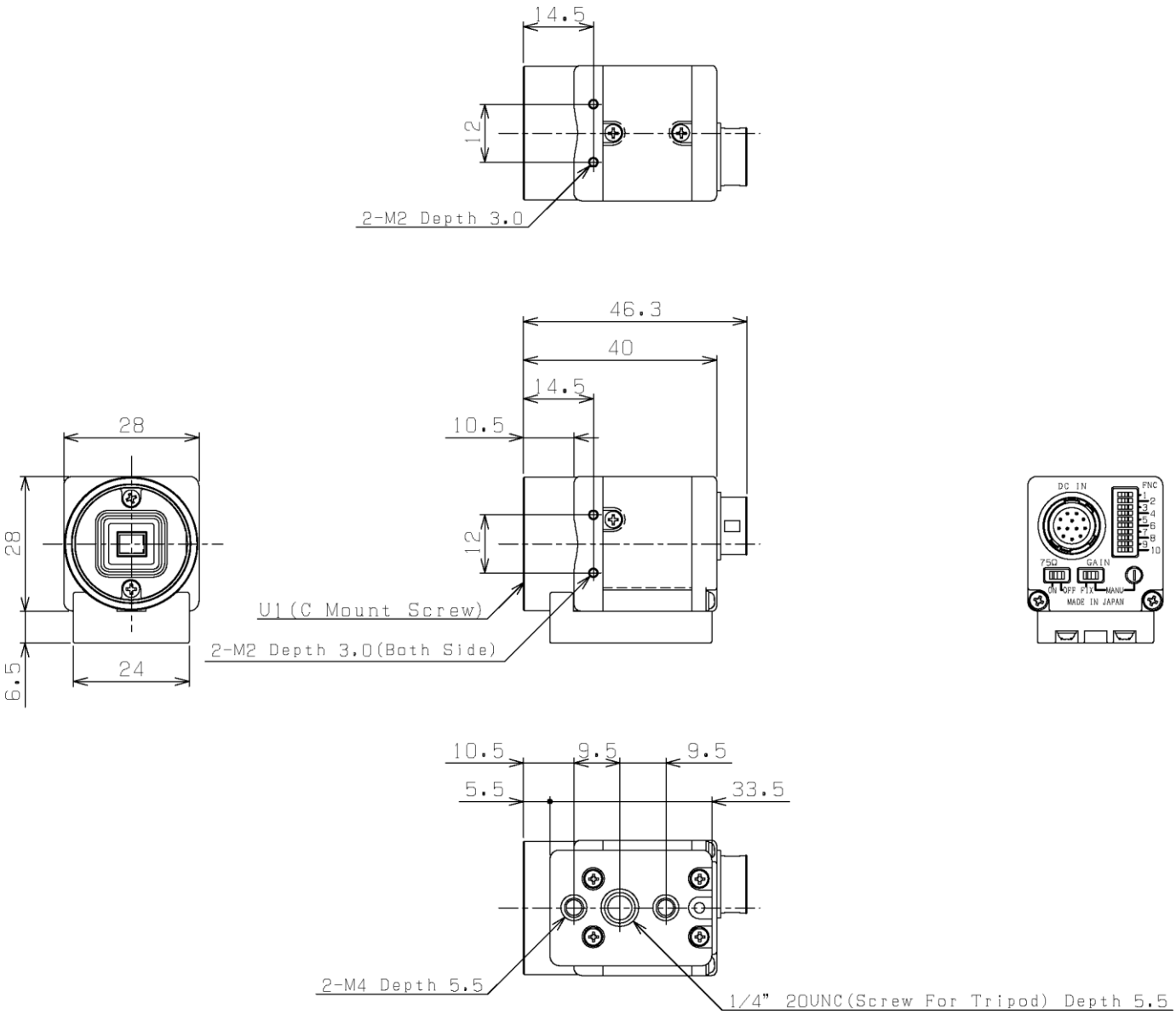
Unit: mm

B. Tripod Dimensions



Unit: mm

C. Camera with Tripod Dimensions



Unit: mm

Revisions

Revision	Date (D/M/Y)	Changes	Name	Changes
1.0	23/08/2006	Created Document	Sam Aimono	
1.1	22/08/2006	Update whole document	Sam Aimono	
1.2	19/09/2006	Change document structure	Sam Aimono	
1.3	25/04/2007	Update 1) Output timing chart 2) Connector	Sam Aimono	
1.4	01/10/2007	Update 1) Mechanical Specifications (optical center accuracy) 2) Communication Specifications (Add the initial data and the data range) 3) Tripod drawing (Change Japanese to English) 4) Camera Modes	Sam Aimono	
2.0	16/04/2008	Separate document from “Specification” to “Specification” and “User’s Guide”	Sam Aimono	
2.1	12/05/2008	Edited English	Michelle Campbell	

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